

C²
6. (Amended) The cell of claim 1, wherein the transgene is a knockout, or a knockin.

7. (Amended) The cell of claim 5, wherein the transgene further comprises a promoter wherein the nucleic acid sequence is under the control of the promoter.

8. (Reiterated) The cell of claim 7, wherein the promoter is a tissue-specific promoter.

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9. (Amended) The cell of claim 8, wherein the tissue-specific promoter is a promoter preferentially expressed in mammary gland epithelial cells.

10. (Amended) The cell of claim 9, wherein the promoter is selected from the group consisting of a β -casein promoter, a β -lactoglobulin promoter, whey acid protein promoter and lactalbumin promoter.

11. (Reiterated) The cell of claim 7, wherein the promoter is a caprine promoter.

12. (Amended) The cell of claim 5, wherein the nucleic acid sequence encodes a polypeptide selected from the group consisting of a hormone, an immunoglobulin, a plasma protein, and an enzyme.

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13. (Amended) The cell of claim 5, wherein the nucleic acid sequence encodes a polypeptide selected from the group consisting of an α -1 proteinase inhibitor, an alkaline phosphatase, an angiogenin, an extracellular superoxide dismutase, a fibrogen, a glucocerebrosidase, a glutamate decarboxylase, a human serum albumin, a myelin basic protein, a proinsulin, a soluble CD4, a lactoferrin, a lactoglobulin, a lysozyme, a lactoalbumin, an erythropoietin, a tissue plasminogen activator, a human growth factor, an antithrombin III, an insulin, a prolactin, and an α 1-antitrypsin.

C⁴ 14. (Amended) A purified embryonic or fetal caprine somatic cell obtained from an embryonic or fetal goat derived from a transgenic goat, wherein the cell comprises a heterologous nucleic acid sequence which is integrated into the genome of the somatic cell.

C⁵ 17. (Amended) The cell of claim 14 wherein the heterologous nucleic acid sequence encodes a human polypeptide.

18. (Amended) The cell of claim 14, wherein the nucleic acid is a knockout, or a knockin.

19. (Reiterated) The cell of claim 14, wherein the nucleic acid is under the control of a promoter.

20. (Reiterated) The cell of claim 19, wherein the promoter is a tissue specific promoter.

C⁶ 21. (Amended) The cell of claim 20, wherein the tissue-specific promoter is a promoter preferentially expressed in mammary gland epithelial cells.

22. (Amended) The cell of claim 21, wherein the promoter is selected from the group consisting of a β -casein promoter, a β -lactoglobulin promoter, whey acid protein promoter and lactalbumin promoter.

23. (Reiterated) The cell of claim 19, wherein the promoter is a caprine promoter.

24. (Reiterated) The cell of claim 14, wherein the nucleic acid encodes a polypeptide selected from the group consisting of a hormone, an immunoglobulin, a plasma protein, and an enzyme.

C⁷ 25. (Amended) The cell of claim 14, wherein the nucleic acid encodes a polypeptide selected from the group consisting of an α -1 proteinase inhibitor, an alkaline phosphatase, an angiogenin, an extracellular superoxide dismutase, a fibrogen, a glucocerebrosidase, a glutamate

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decarboxylase, a human serum albumin, a myelin basic protein, a proinsulin, a soluble CD4, a lactoferrin, a lactoglobulin, a lysozyme, a lactoalbumin, an erythropoietin, a tissue plasminogen activator, a human growth factor, an antithrombin III, an insulin, a prolactin, and an α 1-antitrypsin.

26. (Reiterated) The cell of claim 1, wherein the somatic cell is a fibroblast.

27. (Reiterated) The cell of claim 26, wherein the cell is a primary fibroblast.

28. (Reiterated) The cell of claim 26, wherein the primary fibroblast is a primary derived fibroblast.

30. (Amended) The cell of claim 1, wherein the germ cell is sperm from a transgenic goat.

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31. (Amended) A purified preparation of an embryonic or fetal caprine somatic cell obtained from an embryonic or fetal goat derived from a germ cell of a transgenic goat, wherein the cell comprises a transgene which is integrated into the genome of the somatic cell.

34. (Amended) The preparation of claim 31, wherein the transgene is a heterologous transgene.

35. (Amended) The preparation of claim 34, wherein the heterologous transgene comprises a nucleic acid sequence encoding a human polypeptide.

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36. (Amended) The preparation of claim 31, wherein the transgene is a knockout, or a knockin.

37. (Amended) The preparation of claim 35, wherein the transgene further comprises a promoter wherein the nucleic acid is under the control of the promoter.

38. (Amended) The preparation of claim 37, wherein the promoter is a tissue specific promoter.

39. (Amended) The preparation of claim 38, wherein the tissue-specific promoter is a promoter preferentially expressed in mammary gland epithelial cells.

Sub 02 40. (Amended) The preparation of claim 39, wherein the is selected from the group consisting of a β -casein promoter, a β -lactoglobulin promoter, whey acid protein promoter and lactalbumin promoter.

C⁹ 41. (Amended) The preparation of claim 37, wherein the promoter is a caprine promoter.

42. (Amended) The preparation of claim 35, wherein the nucleic acid encodes a polypeptide selected from the group consisting of a hormone, an immunoglobulin, a plasma protein, and an enzyme.

43. (Amended) The preparation of claim 35, wherein the nucleic acid encodes a polypeptide selected from the group consisting of an α -1 proteinase inhibitor, an alkaline phosphatase, an angiogenin, an extracellular superoxide dismutase, a fibrogen, a glucocerebrosidase, a glutamate decarboxylase, a human serum albumin, a myelin basic protein, a proinsulin, a soluble CD4, a lactoferrin, a lactoglobulin, a lysozyme, a lactoalbumin, an erythropoietin, a tissue plasminogen activator, a human growth factor, an antithrombin III, an insulin, a prolactin, and an α 1-antitrypsin.

Sub 03 44. (Amended) A purified preparation of an embryonic or fetal caprine somatic cell obtained from an embryonic or fetal goat derived from a germ cell of a transgenic goat, wherein the cell comprises a heterologous nucleic acid integrated into the genome of the somatic cell.

C¹⁰ 47. (Amended) The preparation of claim 44, wherein the heterologous nucleic acid encodes a human polypeptide.

48. (Amended) The preparation of claim 44, wherein the nucleic acid is a knockout, or a knockin.

49. (Amended) The preparation of claim 44, wherein the nucleic acid is under the control of a promoter.

50. (Amended) The preparation of claim 49, wherein the promoter is a tissue-specific promoter.

51. (Amended) The preparation of claim 50, wherein the tissue-specific promoter is a promoter preferentially expressed in mammary gland epithelial cells.

52. (Amended) The preparation of claim 51, wherein the promoter is selected from the group consisting of a β -casein promoter, a β -lactoglobulin promoter, whey acid protein promoter and lactalbumin promoter.

53. (Amended) The preparation of claim 49, wherein the promoter is a caprine promoter.

54. (Amended) The preparation of claim 44, wherein the nucleic acid sequence encodes a polypeptide selected from the group consisting of a hormone, an immunoglobulin, a plasma protein, and an enzyme.

55. (Amended) The preparation of claim 44, wherein the nucleic acid sequence encodes a polypeptide selected from the group consisting of an α -1 proteinase inhibitor, an alkaline phosphatase, an angiogenin, an extracellular superoxide dismutase, a fibrogen, a glucocerebrosidase, a glutamate decarboxylase, a human serum albumin, a myelin basic protein, a proinsulin, a soluble CD4, a lactoferrin, a lactoglobulin, a lysozyme, a lactoalbumin, an erythropoietin, a tissue plasminogen activator, a human growth factor, an antithrombin III, an insulin, a prolactin, and an α 1-antitrypsin..

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56. (Amended) The preparation of claim 31, wherein the somatic cell is a fibroblast.

57. (Amended) The preparation of claim 56, wherein the fibroblast is a primary fibroblast.

58. (Amended) The preparation of claim 56, wherein the fibroblast is a primary derived fibroblast.

59. (Amended) The preparation of claim 31, wherein the germ cell is sperm from a transgenic goat.

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61. (Amended) A method of preparing an embryonic or fetal caprine somatic cell line comprising:

- (a) obtaining a somatic cell from an embryonic or fetal goat derived from a germ cell of a transgenic goat, wherein the cell comprises a heterologous nucleic acid sequence which is integrated into the genome of the somatic cell; and
- (b) culturing the cell in a suitable medium

such that a somatic cell line is obtained.

65. (Amended) The method of claim 61, wherein the heterologous nucleic acid sequence encodes a human polypeptide.

66. (Amended) The method of claim 61, wherein the sequence is a knockout, or a knockin.

67. (Amended) The method of claim 61, wherein the nucleic acid sequence is under the control of a promoter.

68. (Reiterated) The method of claim 67, wherein the promoter is a tissue-specific promoter.

69. (Amended) The method of claim 88, wherein the tissue-specific promoter is a promoter preferentially expressed in mammary gland epithelial cells.

70. (Amended) The method of claim 69, wherein the promoter is selected from the group consisting of a β -casein promoter, a β -lactoglobulin promoter, whey acid protein promoter and lactalbumin promoter.

71. (Reiterated) The method of claim 67, wherein the promoter is a caprine promoter.

72. (Amended) The method of claim 61, wherein the nucleic acid sequence encodes a polypeptide selected from the group consisting of a hormone, an immunoglobulin, a plasma protein, and an enzyme.

73. (Amended) The method of claim 61, wherein the nucleic acid sequence encodes a polypeptide selected from the group consisting of an α -1 proteinase inhibitor, an alkaline phosphatase, an angiogenin, an extracellular superoxide dismutase, a fibrogen, a glucocerebrosidase, a glutamate decarboxylase, a human serum albumin, a myelin basic protein, a proinsulin, a soluble CD4, a lactoferrin, a lactoglobulin, a lysozyme, a lactoalbumin, an erythropoietin, a tissue plasminogen activator, a human growth factor, an antithrombin III, an insulin, a prolactin, and an α 1-antitrypsin.

86. (Reiterated) The method of claim 61, wherein the somatic cell is a fibroblast.

87. (Reiterated) The method of claim 86, wherein the fibroblast is a primary fibroblast.

88. (Reiterated) The method of claim 86, wherein the fibroblast is a primary derived fibroblast.

90. (Amended) The method of claim 61, wherein the germ cell is sperm from a transgenic goat.

91. (Amended) A method of preparing a genetically engineered cell line, comprising:

- (a) inseminating a female recipient with semen from a transgenic non-human animal;

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- (b) obtaining a transgenic non-human embryo from the recipient;
- (c) obtaining a somatic cell from the embryo; and,
- (d) culturing the cell in a suitable medium,

such that a somatic cell line is obtained.
